

What is claimed is:

1. An enamel base comprising a substantially homogeneous blend of a bituminous base, a petroleum base and coal, said enamel base being substantially free from separated layers and having a Ring and Ball (ASTM D36) softening point of at least about 70°C.
2. The enamel base of claim 1 having a penetration determined at 25°C by the method of ASTM D5 of at least about 2.
3. The enamel base of claim 2, having a B(a)P equivalent at least about 10% less than a corresponding enamel base derived from only a bituminous base and coal.
4. The enamel base of claim 1, wherein the bituminous base is selected from the group consisting of coal tar, coal tar pitch, refined coal tar, and roofing tar.
5. The enamel base of claim 4, wherein the petroleum base is selected from the group consisting of cat cracked clarified oil, slurry oil, decant oil, and aromatic petroleum oil.
6. The enamel base of claim 5, wherein the bituminous base comprises from about 20 to about 50 weight percent of the enamel base.

7. The enamel base of claim 5, wherein the petroleum base comprises from about 35 to about 60 weight percent of the enamel base.

8. The enamel base of claim 7, wherein the coal is coal dust and comprises from about 10 to about 30 weight percent of the enamel base.

9. A tar-based enamel comprising an enamel base and a filler, wherein said enamel base comprises a substantially homogeneous blend of a bituminous base, a petroleum base and coal, said enamel base being substantially free from separated layers and wherein said enamel base has a Ring and Ball (ASTM D36) softening point of at least about 90°C.

10. The tar-based enamel of claim 9, wherein said enamel base has a B(a)P equivalent at least about 20% less than a corresponding enamel base derived from only a bituminous base and coal.

11. The tar-based enamel of claim 9, wherein the filler comprises from about 10 to about 40 weight percent of the tar-based enamel.

12. The tar-based enamel of claim 9 wherein the filler is selected from the group consisting of talc, slate, mica, limestone, silica and kalon.

13. The tar-based enamel of claim 12, wherein the filler is talc.
14. The tar-based enamel of claim 13 having Ring and Ball (ASTM D36) softening point of at least about 100°C.
15. The tar-based enamel of claim 14 having a penetration determined at 25°C by the method of ASTM D5 of from about 2 to about 20.
16. The tar-based enamel of claim 14 having a penetration of from about 5 to about 10.
17. The tar-based enamel of claim 14 having a penetration of from about 10 to about 20.
18. The tar-based enamel of claim 12, wherein the bituminous base is selected from the group consisting of coal tar, coal tar pitch, refined coal tar, and roofing tar.
19. The tar-based enamel of claim 18, wherein the petroleum base is selected from the group consisting of cat cracked clarified oil, slurry oil, decant oil, and aromatic petroleum oil.

20. A method for preparing an enamel base, comprising forming a mixture of at least one bituminous base, at least one petroleum base and coal, heating said mixture, agitating said mixture, and distilling sufficient distillate to provide an enamel base having a Ring and Ball (ASTM D36) softening point of at least about 70°C.

21. The method of claim 20, wherein said distilling is carried out at atmospheric pressure and said heating causes the mixture to have a liquid temperature of at least about 300°C.

22. The method of claim 20, wherein said distilling is carried out at reduced pressure and said heating causes the mixture to have a liquid temperature of at least about 300°C.

23. The method of claim 21, wherein said bituminous base is selected from the group consisting of coal tar, coal tar pitch, refined coal tar, and roofing tar and said petroleum base is selected from the group consisting of cat cracked clarified oil, slurry oil, decant oil, and aromatic petroleum oil and said coal is coal dust.

24. The method of claim 23, wherein the bituminous base comprises from about 20 to about 50 weight percent of the mixture.

25. The method of claim 23, wherein the petroleum base comprises from about 35 to about 60 weight percent of the mixture.

26 The method of claim 23, wherein the coal dust comprises from about 10 to about 30 weight percent of the mixture.

27 A method for preparing a tar-based enamel having a Ring and Ball (ASTM D36) softening point of at least about 90°C, comprising forming a mixture of an enamel base and a filler and heating and stirring said mixture at a temperature of at least about 225°C until the mixture is uniform, wherein said enamel base is derived from at least one bituminous base, at least one petroleum base and coal.

28. The method of claim 27, wherein said bituminous base is selected from the group consisting of coal tar, coal tar pitch, refined coal tar and roofing tar, said petroleum base is selected from the group consisting of cat cracked clarified oil, slurry oil, decant oil, and aromatic petroleum oil, and said coal is coal dust.

29. The method of claim 27, wherein the filler comprises from about 10 to about 40 weight percent of the tar-based enamel.

30. The method of claim 29, wherein said tar based enamel has a B(a)P equivalent at least about 20% less than a corresponding tar-based enamel derived solely from bituminous materials.

31. The method of claim 30, wherein the filler is selected from the group consisting of talc, slate, mica, limestone, silica and kalon.

32. A treated metal article comprising a metal article having at least one surface coated with a tar-based enamel having a Ring and Ball (ASTM D36) softening point of at least about 90°C, said enamel comprising an enamel base and a filler, wherein the enamel base further comprises a homogeneous blend of a bituminous base, a petroleum base and coal, said enamel base being substantially free from separated layers.

33. The treated metal article of claim 32, wherein said enamel has a B(a)P equivalent at least about 20% less than a corresponding tar-based enamel derived solely from bituminous materials

34. The treated metal article of claim 33, wherein the metal article is a steel pipe.

35. The treated metal article of claim 33, wherein the metal article is a steel tank.

36. The treated steel tank of claim 35, wherein the surface coated is an interior surface and said enamel has a B(a)P equivalent at least about 40% less than a corresponding tar-based enamel derived solely from bituminous materials

37. A treated metal article comprising a metal article having at least one surface coated with an enamel base having a Ring and Ball (ASTM D36) softening point of at least about 90°C, said enamel base comprising a homogeneous blend of a bituminous base, a petroleum base and coal, said enamel base being substantially free from separated layers.

38. The treated metal article of claim 37, wherein the metal article is a steel tank and the surface coated is an interior surface.

39. A method for forming a coated metal surface on a metal article comprising applying to the metal surface a preheated tar-based enamel at a temperature of at least about 200°C and cooling said metal surface and tar-based enamel to form said coated metal surface, wherein said tar-based enamel has a Ring and Ball (ASTM D36) softening point of at least about 90°C and comprises an enamel base and a filler, wherein the enamel base further comprises a homogeneous blend of a bituminous base, a petroleum base and coal.

40. The method of claim 39, wherein said tar based enamel has a B(a)P equivalent at least about 20% less than a corresponding tar-based enamel derived solely from bituminous materials.